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APPLICATION NO.	FILING DATE	FIRST-NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,168	04/22/2004	John Scott Buchanan	P2004J011	8162

7590 03/17/2006

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EXAMINER

BUSHEY, CHARLES S

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/830,168

Applicant(s)

BUCHANAN, JOHN SCOTT

Examiner

Scott Bushey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 21-24 is/are pending in the application.
- 4a) Of the above claim(s) 10 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7,8,14 and 15 is/are allowed.
- 6) ☒ Claim(s) 1-6,9,11-13,16-18 and 21 is/are rejected.
- 7) ☒ Claim(s) 22-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1-5-06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. This application contains claim 10 drawn to an invention nonelected with traverse in the paper submitted July 27, 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6, 9, 11-13, 16-18, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Trutna '469 taken together with Brunner et al.

Trutna '469 (Figs. 1 and 2; col. 4, line 49 through col. 5, line 49; col. 10, lines 46-49) substantially discloses applicant's invention as recited by instant claims 1-6, 9, 11-13, 16-18, and 21, except for the flow deflectors being attached to the bottom portion of the channels, particularly to the side of the bottom portion of the channels of the upper tier.

Brunner et al (Figs. 3, 4, and 7; page 1, lines 25-29, 52-71) disclose gas-liquid separators of the type as taught by Trutna '469, wherein the u-shaped channels are provided with deflector elements connected to the channels and arranged between the tiers of channels to enhance the separation of the liquid from the co-currently flowing

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liquid/gas stream. Brunner et al also clearly teaches separation channels having flow deflectors (b) attached to the bottom portion of the upper tier of channels and also flow deflectors (a) attached to the side of the bottom portion of the upper tier of channels. As shown by the drawings of Brunner et al, the upwardly flowing liquid entrained gas stream is clearly impeded by the vertically extending deflectors (b), which are attached to the bottoms of the channels, as well as by the angled deflectors (a), which extend from the sidewalls of the bottom of the channels. One having ordinary skill in the art would clearly recognize that a gas that is impeded by a solid wall or deflector will be influenced by the solid surface to flow in many directions, including the formation of eddy currents that will influence the gas flow to enter the channels as presented by the embodiment of Figure 7 of Brunner et al. It would have been obvious for an artisan at the time of the invention, to provide flow deflectors attached to the bottom portion of the channels, particularly to the side of the bottom portion of the channels as taught by Trutna '469, in view Brunner et al, since such would best enhance the separation of the liquid from the flow stream by causing deflection of the heavier liquid particles at the point of earliest contact of the stream with the upper tier of channels.

Allowable Subject Matter

4. Claims 7, 8, 14, and 15 are allowed.
5. Claims 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

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6. Applicant's arguments with respect to new claim 21 have been considered but are moot in view of the new grounds of rejection made thereto.

7. Applicant's arguments filed January 23, 2006, with respect to instant claims 1-6, 9, 11-13, and 16-18, have been fully considered but they are not persuasive.

Applicant's arguments directed to the rejection of the claims over Trutna '469 taken with Brunner et al are not persuasive in view of the discussion within the rejection statement above. Clearly, applicant's position that none of the gas stream may be directed into the lower channel of Brunner et al in light of the placement of the downwardly extending deflectors from the downstream collector channels is untenable. As stated above, interaction of the gas stream with the solid surfaces of the deflectors will cause at least some of the gas stream to deflect in a reversing direction, which will direct at least that portion of the gas flow into an underlying channel.

Conclusion

8. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bushey whose telephone number is 571 272-1153. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

csb
3-16-06

Scott Bushey
Primary Examiner
Art Unit 1724


3-16-06